

Addendum #3

Project Name: Hastings City Auditorium – Interior Renovation
Hastings, Nebraska
Project No.: AUD-2015-15011C
Issued: December 07, 2015
Bid Date: 10:00am, Thursday, December 10, 2015
Bid Opening: Sinclair Hille Architects
Location: Lincoln, NE 68508

This Addendum is issued to all known bidders before receipt of proposals. This Addendum is to authorize the use of the following information in preparing proposals for the above named project. The bidder **must** enter the number of this Addendum on the **Proposal Sheet**.

MODIFICATIONS TO THE DRAWINGS

ADD 3-1. Existing Lay-in Ceiling

Referencing Sheet AD102, add Keynote 024119.AA to Auditorium. Existing 2x4 lay-in ceiling to be removed in its entirety.

Referencing Sheet A701, Keynote 099123.A (painting of existing ceiling) applies to existing 9x9 perforated ceiling tile mounted to underside of plaster ceiling.

ADD 3-2. Overhead Coiling Counter Door

Referencing Details C1/A101, K4/A500, C6/A600 ; Keynote 083313.A to read:

COILING COUNTER DOOR; 5'0" H X 11'-0" W

ADD 3-3. Acoustical Panel Ceiling Height

Referencing Sheet A700, Suspended Acoustical Panel Ceiling below balcony to be at Existing Ceiling Height (approximately 10'-8" AFF)

ADD 3-4. Broadcast Flooring Extent

Referencing Attached sketch ADD3-4, see clarification on extent of Epoxy Broadcast Flooring System (099500.A)

ADD 3-5. AL5

Referencing Detail C1 Sheet A501, remove AL5 frame type, as it is no longer used.

ADD 3-6. Roofing Replacement

Referencing Attached sketch ADD3-6, remove and replace EPDM roofing and insulation in the 3 referenced locations.

ADD 3-7. Backflow Preventer

Referencing attached Sheet MD100, Contractor to provide new backflow preventer on existing fire entrance.

MODIFICATIONS TO THE SPECIFICATIONS

ADD 3-8. Referencing Specification Section 233113, add “Set Duct MFG” to list of approved manufacturers.

ADD 3-9. Add the following sections to the electrical specifications:

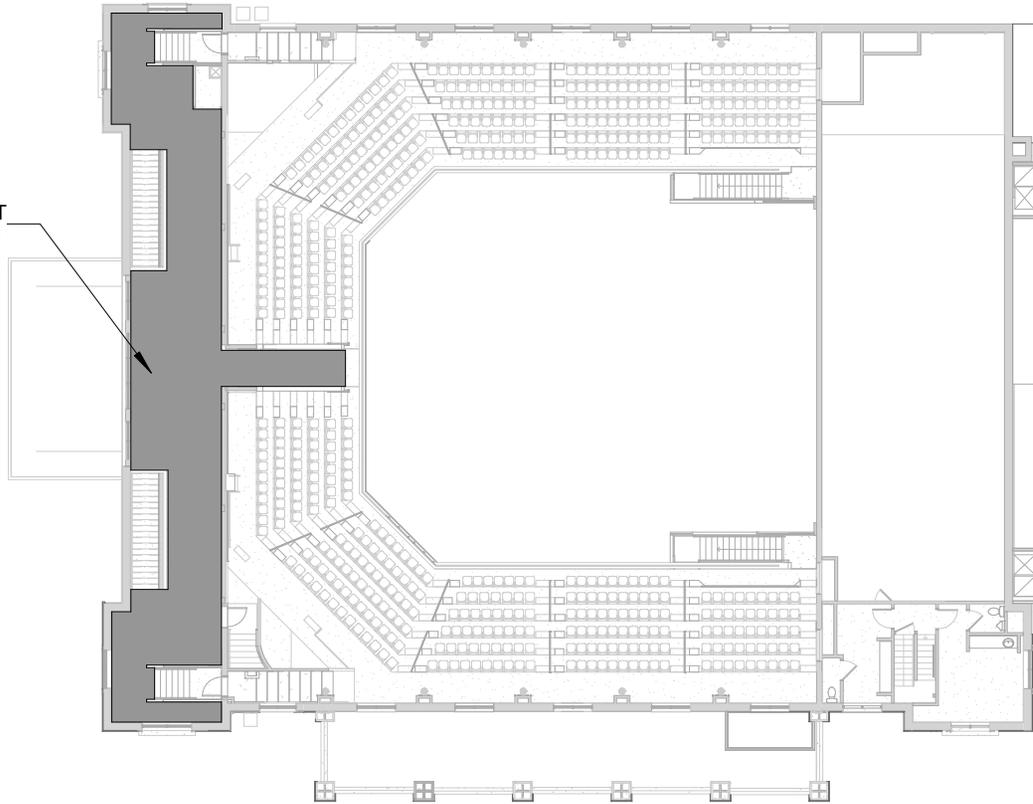
- 260923 Lighting Control Devices
- 265119 Lighting

ATTACHMENTS

- ADD3-4 Broadcast Flooring Extents (1 sheet)
- ADD3-6 Roof Replacement (1 sheet)
- MD100, re-issued full sheet
- Section 260923 – Lighting Control Devices (8 Pages)
- Section 265119 – Lighting (7 Pages)

End of Addendum #3

099500.A
EPOXY BROADCAST
SYSTEM FLOORING
(EXTENT SHOWN IN
SHADED REGION)



Second Floor Plan

SCALE: 1" = 30'-0"

Attachment to: Addendum #3

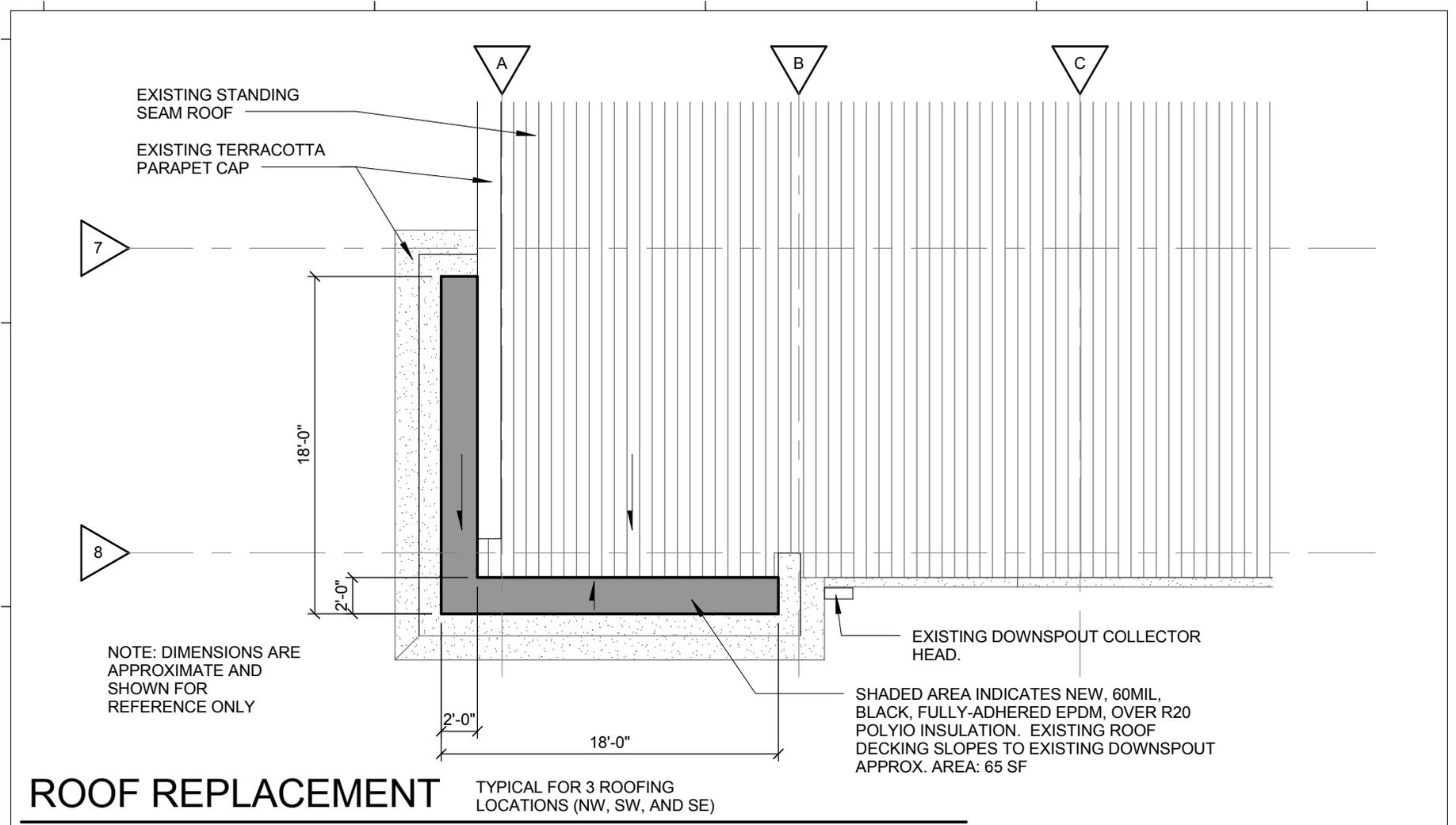
Date: 12/04/15

Project Name: Hastings City Auditorium Interior Renovation

Project Number: 15011

ADD 3-4

SINCLAIR **hille**
architects



ROOF REPLACEMENT

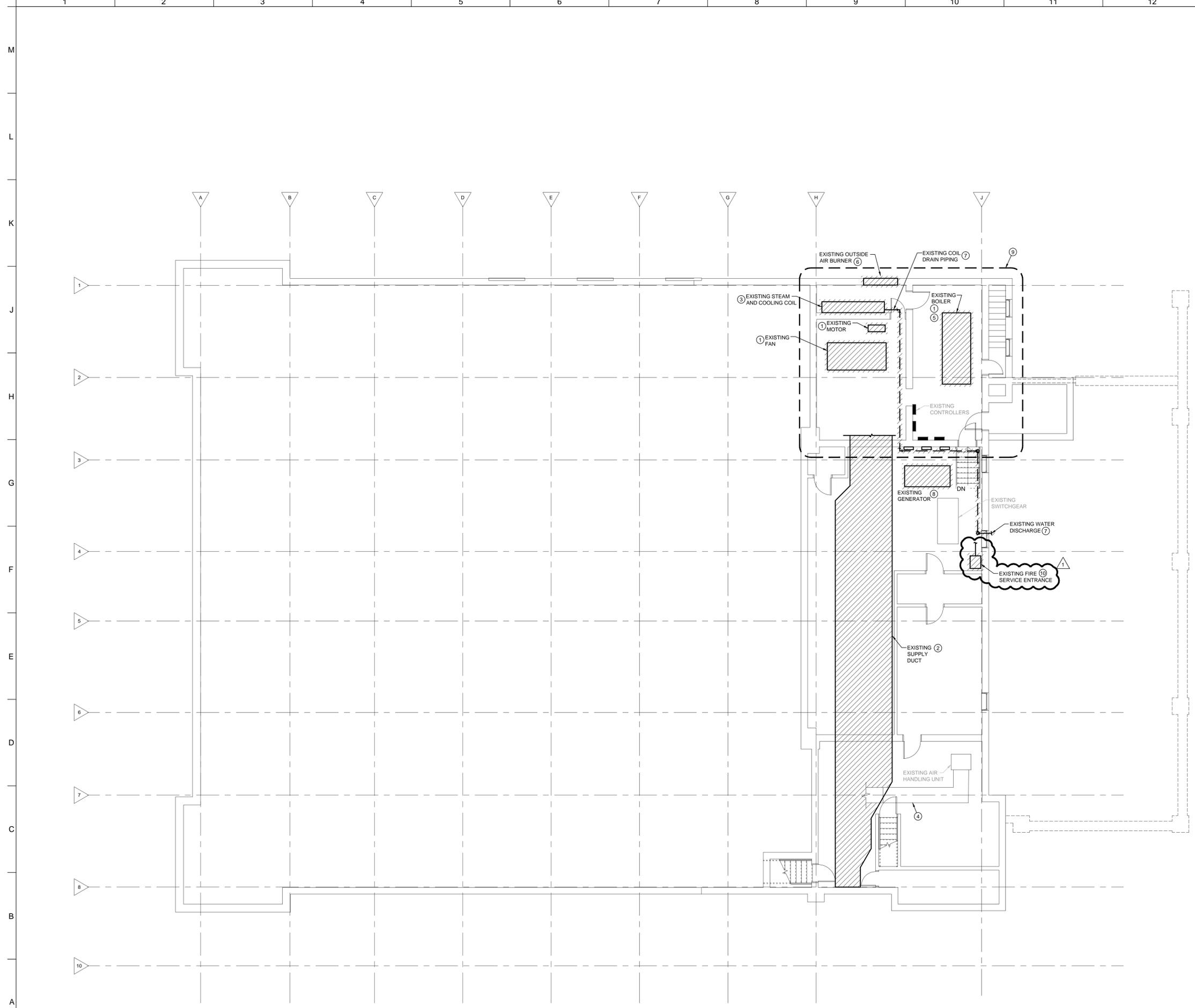
TYPICAL FOR 3 ROOFING LOCATIONS (NW, SW, AND SE)

SCALE: 1/8" = 1'-0"

Attachment to:	Addendum #3
Date:	12/07/15
Project Name:	Hastings City Auditorium Interior Renovation
Project Number:	15011

ADD 3-6

SINCLAIR **hille** architects



GENERAL NOTES:

- EXISTING FLOOR, CABINETRY, EQUIPMENT AND FURNITURE MAY REMAIN. CONTRACTOR TO PROTECT ITEMS FROM ANY DUST ACCUMULATION AND/OR CONSTRUCTION DAMAGE. COORDINATE ITEMS REMAINING WITH ARCHITECTURAL SHEETS.
- CONTRACTOR TO PROTECT FLOORING THROUGHOUT WORK AREA. ANY DAMAGE TO BE REPAIRED BY CONTRACTOR.
- SUPPORT EXISTING ELECTRICAL, DATA, PHONE, AND TV WIRING WHERE REQUIRED WHEN PIPING, DUCTWORK, CEILING, ETC. ARE REMOVED. PROTECT WIRING FROM BEING DAMAGED DURING DEMO AND CONSTRUCTION. ANY DAMAGED CABBING, WIRING, OR RACEWAY SHALL BE REPLACED IN ITS ENTIRETY.
- COORDINATE ITEMS TO BE SALVAGED WITH OWNER.
- PATCH ALL HOLES LEFT FROM REMOVING PIPES, DUCT, EQUIPMENT, AND CONTROLS.

SHEET NOTES:

- EXISTING EQUIPMENT AND ALL ASSOCIATED ACCESSORIES TO BE REMOVED COMPLETELY.
- EXISTING SUPPLY DUCT TO BE REMOVED COMPLETELY. WALLS AND CEILING TO BE PATCHED AS NEEDED. ANY WALL PENETRATIONS TO BE PATCHED AND SEALED TO MATCH ADJACENT FINISH.
- EXISTING COILS AND FILTER SECTION TO BE REMOVED COMPLETELY. DOMESTIC WATER SUPPLY TO BE REMOVED BACK TO BEFORE METER AND CAPPED AT VALVE.
- EXISTING CHANGING ROOM SUPPLY DUCT TO REMAIN. REMOVE AUDITORIUM SUPPLY AS TO NOT DAMAGE SMALLER CHANGING ROOM SUPPLY DUCT.
- BASE OF BOILER CONTAINS ASBESTOS IN INSULATION BETWEEN BRICK AND STEEL. BOILER REMOVAL IS NEEDED TO GAIN ACCESS TO THIS MATERIAL. ABATEMENT TO BE COMPLETED BY OTHERS. COORDINATE WITH OWNER.
- REMOVE INTAKE LOUVER COMPLETELY, INCLUDING AUTOMATIC DAMPER AND WIRING. PATCH AND SEAL EXTERIOR WALL OPENING. COORDINATE WITH ARCHITECT TO MATCH EXISTING EXTERIOR.
- REMOVE COIL DRAIN PIPING ENTIRELY TO EXTERIOR DISCHARGE. PATCH AND SEAL WALL PENETRATIONS TO MATCH EXISTING FINISH. AREA DRAIN TO BE REUSED FOR AHU-1 CONDENSATE CONNECTION.
- EXISTING GENERATOR AND ALL ACCESSORIES TO BE REMOVED COMPLETELY BY ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR TO REMOVE VENT AND FLUE PIPING COMPLETELY, SEALING ANY WALL PENETRATIONS. GAS PIPING TO BE REMOVED BACK TO WALL PENETRATION, TO BE USED FOR FUTURE AHU-1 CONNECTION. SEE M101 FOR FURTHER DETAILS.
- REMOVE ALL STEAM AND CONDENSATE PIPING IN THIS AREA. CAP AND SEAL ANY WALL PENETRATIONS.
- EXISTING GATE VALVE AND RISER CHECK VALVE TO BE MOVED VERTICALLY TO ALLOW FOR ADDITION OF NEW BACKFLOW PREVENTER. BACKFLOW PREVENTER TO BE PLACED IN VERTICAL BELOW GATE VALVE. REPOSITION ALL ACCESSORIES AS NEEDED.



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Lower Level Mechanical Demo Plan

SHA PROJECT NO. 15011

MD100

A1 LOWER LEVEL MECHANICAL DEMO PLAN

SCALE: 1/8" = 1'-0"

SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Time switches.
- 2. Indoor occupancy and vacancy sensors.
- 3. Switchbox-mounted occupancy sensors.
- 4. Lighting Control Panel and lighting controls

B. Related Requirements:

- 1. Section 262726 "Wiring Devices" for wall-box dimmers, non-networkable wall-switch occupancy sensors, and manual light switches.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

- 1. Show installation details for the following:
 - a. Occupancy sensors.
 - b. Vacancy sensors.
- 2. Interconnection diagrams showing field-installed wiring.
- 3. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plan(s) and elevations, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

- 1. Suspended ceiling components.
- 2. Structural members to which equipment will be attached.
- 3. Items penetrating finished ceiling, including the following:
 - a. Luminaires.
 - b. Air outlets and inlets.

- c. Speakers.
- d. Sprinklers.
- e. Access panels.
- f. Control modules.

- B. Field quality-control reports.
- C. Sample Warranty: For manufacturer's warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For each type of lighting control device to include in operation and maintenance manuals.
- B. Software and Firmware Operational Documentation:
 - 1. Software operating and upgrade manuals.
 - 2. Program Software Backup: On USB media or on manufacturer's website. Provide names, versions, and website addresses for locations of installed software.
 - 3. Device address list.
 - 4. Printout of software application and graphic screens.

1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace lighting control devices that fail(s) in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Faulty operation of lighting control software.
 - b. Faulty operation of lighting control devices.
 - 2. Warranty Period: Two year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TIME SWITCHES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Intelligent Lighting Controls, Inc
 - 2. Cooper Industries, Inc.
 - 3. Intermatic, Inc.
 - 4. Invensys Controls.
 - 5. Leviton Manufacturing Co., Inc.
 - 6. NSi Industries LLC.

2.2 INDOOR OCCUPANCY AND VACANCY SENSORS

- A. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. ILC- Intelligent Lighting Controls, Inc.
 2. [Bryant Electric.](#)
 3. [Cooper Industries, Inc.](#)
 4. [Hubbell Building Automation, Inc.](#)
 5. [Leviton Manufacturing Co., Inc.](#)
 6. [Lithonia Lighting; Acuity Brands Lighting, Inc.](#)
 7. [Lutron Electronics Co., Inc.](#)
 8. [NSi Industries LLC.](#)
 9. [Philips Lighting Controls.](#)
 10. [RAB Lighting.](#)
 11. [Sensor Switch, Inc.](#)
 12. [Square D.](#)
- B. General Requirements for Sensors:
1. Wall or ceiling-mounted, solid-state indoor occupancy sensors.
 2. Dual technology.
 3. Integrated power pack.
 4. Hardwired connection to switch.
 5. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 6. Operation:
 - a. Occupancy Sensor: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
 7. Sensor Output: Contacts rated to operate the connected relay, complying with UL 773A.
 8. Power: Line voltage.
 9. Mounting:
 - a. Sensor: Suitable for mounting in any position on a standard outlet box.
 - b. Relay: Externally mounted through a **1/2-inch (13-mm)** knockout in a standard electrical enclosure.
 - c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
 10. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.
 11. Bypass Switch: Override the "on" function in case of sensor failure.
 12. Automatic Light-Level Sensor: Adjustable from **2 to 200 fc (21.5 to 2152 lux)**; turn lights off when selected lighting level is present.
- C. Dual-Technology Type: Wall or ceiling mounted; detect occupants in coverage area using PIR and ultrasonic detection methods. The particular technology or combination of technologies that control on-off functions is selectable in the field by operating controls on unit.
1. Sensitivity Adjustment: Separate for each sensing technology.

2. Detector Sensitivity: Detect occurrences of **6-inch- (150-mm-)** minimum movement of any portion of a human body that presents a target of not less than **36 sq. in. (232 sq. cm)**, and detect a person of average size and weight moving not less than **12 inches (305 mm)** in either a horizontal or a vertical manner at an approximate speed of **12 inches/s (305 mm/s)**.
3. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of **1000 sq. ft. (93 sq. m)** when mounted on a **96-inch- (2440-mm-)** high ceiling.
4. Detection Coverage (Room, Wall Mounted): Detect occupancy anywhere within a 180-degree pattern centered on the sensor over an area of **1000 square feet (110 square meters)**, **2000 square feet (220 square meters)** or **3000 square feet (330 square meters)** when mounted **48 inches (1200 mm)** above finished floor, whichever is appropriate for the area.

2.3 SWITCHBOX-MOUNTED OCCUPANCY SENSORS

- A. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 1. [Bryant Electric.](#)
 2. [Cooper Industries, Inc.](#)
 3. [Hubbell Building Automation, Inc.](#)
 4. [Leviton Manufacturing Co., Inc.](#)
 5. [Lithonia Lighting; Acuity Brands Lighting, Inc.](#)
 6. [Lutron Electronics Co., Inc.](#)
 7. [NSi Industries LLC.](#)
 8. [Philips Lighting Controls.](#)
 9. [RAB Lighting.](#)
 10. [Sensor Switch, Inc.](#)
 11. [Square D.](#)
- B. General Requirements for Sensors: Automatic-wall-switch occupancy sensor with manual on-off switch, suitable for mounting in a single gang switchbox using hardwired connection.
 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 2. Occupancy Sensor Operation: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn lights off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
 3. Operating Ambient Conditions: Dry interior conditions, **32 to 120 deg F (0 to 49 deg C)**.
 4. Switch Rating: Not less than 800-VA ballast or LED load at 120 V, 1200-VA ballast or LED load at 277 V, and 800-W incandescent.
- C. Wall-Switch Sensor Tag WS1:
 1. Standard Range: 180-degree field of view, field adjustable from 180 to 40 degrees; with a minimum coverage area of **900 sq. ft. (84 sq. m)** or **2100 sq. ft. (196 sq. m)**, whichever is appropriate for the room.
 2. Sensing Technology: Dual technology - PIR and ultrasonic.
 3. Switch Type: SP.
 4. Capable of controlling load in three-way application.
 5. Voltage: Match the circuit voltage.
 6. Ambient-Light Override: Concealed, field-adjustable, light-level sensor from **10 to 150 fc (108 to 1600 lux)**. The switch prevents the lights from turning on when the light level is higher than the set point of the sensor.
 7. Concealed, field-adjustable, "off" time-delay selector at up to 30 minutes.

8. Color: coordinate color with architect.
9. Faceplate: Color matched to switch.

2.4 LIGHTING CONTROL PANELS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 1. ILC- Intelligent Lighting Controls, Inc.
 2. Watt Stopper
 3. [Bryant Electric.](#)
 4. [Cooper Industries, Inc.](#)
 5. [Hubbell Building Automation, Inc.](#)
 6. [Leviton Manufacturing Co., Inc.](#)
 7. [Lithonia Lighting; Acuity Brands Lighting, Inc.](#)
 8. [Lutron Electronics Co., Inc.](#)
 9. [NSi Industries LLC.](#)
 10. [Philips Lighting Controls.](#)
 11. [RAB Lighting.](#)
 12. [Sensor Switch, Inc.](#)
 13. [Square D.](#)
- B. General Requirements:
 1. Provide lighting control panels and controls in accordance with the drawings.

2.5 CONDUCTORS AND CABLES

- A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Classes 2 and 3 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 24 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- C. Class 1 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 18 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine lighting control devices before installation. Reject lighting control devices that are wet, moisture damaged, or mold damaged.
- B. Examine walls and ceilings for suitable conditions where lighting control devices will be installed.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SENSOR INSTALLATION

- A. Comply with NECA 1.
- B. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression systems, and partition assemblies.
- C. Install and aim sensors in locations to achieve not less than 90-percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

3.3 LIGHTING CONTROL PANEL INSTALLATION

- A. Provide lighting controls in accordance with the design intent as indicated on the drawings.
- B. Provide a full and operational system.

3.4 WIRING INSTALLATION

- A. Comply with NECA 1.
- B. Wiring Method: Comply with Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size is 1/2 inch (13 mm).
- C. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.
- D. Size conductors according to lighting control device manufacturer's written instructions unless otherwise indicated.
- E. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.5 IDENTIFICATION

- A. Identify components and power and control wiring according to Section 260553 "Identification for Electrical Systems."
 - 1. Identify controlled circuits in lighting contactors.
 - 2. Identify circuits or luminaires controlled by photoelectric and occupancy sensors at each sensor.
- B. Label time switches and contactors with a unique designation.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate lighting control devices and perform tests and inspections.

- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
 - 1. Operational Test: After installing time switches and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation.
 - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Lighting control devices will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.

3.7 ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting lighting control devices to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.
 - 1. For occupancy and motion sensors, verify operation at outer limits of detector range. Set time delay to suit Owner's operations.
 - 2. For daylighting controls, adjust set points and deadband controls to suit Owner's operations.
 - 3. Align high-bay occupancy sensors using manufacturer's laser aiming tool.

3.8 SOFTWARE SERVICE AGREEMENT

- A. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for two years.
- B. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within two years from date of Substantial Completion. Upgrading software shall include operating system and new or revised licenses for using software.
 - 1. Upgrade Notice: At least 30 days to allow Owner to schedule and access the system and to upgrade computer equipment if necessary.

3.9 DEMONSTRATION

- A. Coordinate demonstration of products specified in this Section with demonstration requirements for low-voltage, programmable lighting control systems specified in Section 260943.16 "Addressable-Luminaire Lighting Controls" and Section 260943.23 "Relay-Based Lighting Controls."
- B. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain lighting control devices.

END OF SECTION 260923

SECTION 265119 - LIGHTING

PART 1 - PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Interior solid-state luminaires that use LED technology.
- 2. Lighting fixture supports.

B. Related Requirements:

- 1. Section 260923 "Lighting Control Devices" for automatic control of lighting, including time switches, photoelectric relays, occupancy sensors, and multipole lighting relays and contactors.

1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color Rendering Index.
- C. Fixture: See "Luminaire."
- D. IP: International Protection or Ingress Protection Rating.
- E. LED: Light-emitting diode.
- F. Lumen: Measured output of lamp and luminaire, or both.
- G. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

- 1. Arrange in order of luminaire designation.
- 2. Include data on features, accessories, and finishes.
- 3. Include physical description and dimensions of luminaires.
- 4. Include emergency lighting units, including batteries and chargers.
- 5. Include life, output (lumens, CCT, and CRI), and energy efficiency data.

- a. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
 - b. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.
- B. Shop Drawings: For nonstandard or custom luminaires.
- 1. Include plans, elevations, sections, and mounting and attachment details.
 - 2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 3. Include diagrams for power, signal, and control wiring.
- C. Samples: For each luminaire and for each color and texture with standard factory-applied finish.
- D. Samples for Initial Selection: For each type of luminaire with custom factory-applied finishes.
- 1. Include Samples of luminaires and accessories involving color and finish selection.
- E. Samples for Verification: For each type of luminaire.
- 1. Include Samples of luminaires and accessories to verify finish selection.
- F. Product Schedule: For luminaires and lamps. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Lighting luminaires.
- B. Qualification Data: For testing laboratory providing photometric data for luminaires.
- C. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- D. Product Certificates: For each type of luminaire.
- E. Product Test Reports: For each luminaire, for tests performed by a qualified testing agency.
- F. Sample warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals.
 - 1. Provide a list of all lamp types used on Project; use ANSI and manufacturers' codes.

1.7 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
- B. Provide luminaires from a single manufacturer for each luminaire type.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.9 WARRANTY

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
- B. Warranty Period: Five year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 LUMINAIRE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. NRTL Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by an NRTL.
- C. FM Global Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM Global.
- D. Recessed Fixtures: Comply with NEMA LE 4.
- E. Bulb shape complying with ANSI C79.1.
- F. Lamp base complying with ANSI C81.61 or IEC 60061-1.
- G. CRI as indicated in the product data.
- H. Rated lamp life of 50,000 hours.
- I. Lamps dimmable from 100 percent to 0 percent of maximum light output.
- J. Internal driver.
- K. Nominal Operating Voltage: 120 V ac or as indicated by the drawings.
 - 1. Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless otherwise indicated.

2.2 LIGHTING

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Amerlux.
 2. Axis Lighting, Inc.
 3. Cooper Lighting, an Eaton business.
 4. Edison Price Lighting.
 5. Eureka.
 6. Focal Point.
 7. GE Lighting Solutions.
 8. Juno Lighting Group by Schneider Electric.
 9. Lighting Science Group.
 10. Lightolier; a Philips group brand.
 11. Lithonia Lighting; Acuity Brands Lighting, Inc.
 12. MP Lighting.
 13. Pure Lighting.
 14. Specialty Lighting Industries, Inc.
- B. With integral mounting provisions.

2.3 MATERIALS

- A. Metal Parts:
1. Free of burrs and sharp corners and edges.
 2. Sheet metal components shall be steel unless otherwise indicated.
 3. Form and support to prevent warping and sagging.
- B. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
1. Glass: Annealed crystal glass unless otherwise indicated.
 2. Lens Thickness: At least **0.125 inch (3.175 mm)** minimum unless otherwise indicated.
- C. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
1. Label shall include the following lamp characteristics:
 - a. "USE ONLY" and include specific lamp type.
 - b. Lamp diameter, shape, size, wattage, and coating.
 - c. CCT and CRI for all luminaires.

2.4 METAL FINISHES

- A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

2.5 LUMINAIRE FIXTURE SUPPORT COMPONENTS

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: **1/2-inch (13-mm)** steel tubing with swivel ball fittings and ceiling canopy. Finish same as luminaire.
- C. Wires: ASTM A 641/A 641 M, Class 3, soft temper, zinc-coated steel, **12 gage (2.68 mm)**.
- D. Rod Hangers: **3/16-inch (5-mm)** minimum diameter, cadmium-plated, threaded steel rod.
- E. Hook Hangers: Integrated assembly matched to luminaire, line voltage, and equipment with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before fixture installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 TEMPORARY LIGHTING

- A. If approved by the Architect, use selected permanent luminaires for temporary lighting. When construction is sufficiently complete, clean luminaires used for temporary lighting and install new lamps.

3.3 INSTALLATION

- A. Comply with NECA 1.
- B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.
- C. Install lamps in each luminaire.
- D. Supports:
 - 1. Sized and rated for luminaire weight.
 - 2. Able to maintain luminaire position after cleaning and relamping.
 - 3. Provide support for luminaire without causing deflection of ceiling or wall.
 - 4. Luminaire mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and vertical force of 400 percent of luminaire weight.
- E. Flush-Mounted Luminaire Support:
 - 1. Secured to outlet box.

2. Attached to ceiling structural members at four points equally spaced around circumference of luminaire.
3. Trim ring flush with finished surface.

F. Wall-Mounted Luminaire Support:

1. Attached to structural members in walls.
2. Do not attach luminaires directly to gypsum board.

G. Ceiling-Mounted Luminaire Support:

1. Ceiling mount with two **5/32-inch- (4-mm-)** diameter aircraft cable supports adjustable to **120 inches (6 m)** in length.
2. Ceiling mount with pendant mount with **5/32-inch- (4-mm-)** diameter aircraft cable supports adjustable to **120 inches (6 m)** in length.
3. Ceiling mount with hook mount.

H. Suspended Luminaire Support:

1. Pendants and Rods: Where longer than **48 inches (1200 mm)**, brace to limit swinging.
2. Stem-Mounted, Single-Unit Luminaires: Suspend with twin-stem hangers. Support with approved outlet box and accessories that hold stem and provide damping of luminaire oscillations. Support outlet box vertically to building structure using approved devices.
3. Continuous Rows of Luminaires: Use tubing or stem for wiring at one point and tubing or rod wire support for suspension for each unit length of luminaire chassis, including one at each end.
4. Do not use ceiling grid as support for pendant luminaires. Connect support wires or rods to building structure.

I. Ceiling-Grid-Mounted Luminaires:

1. Secure to any required outlet box.
2. Secure luminaire to the luminaire opening using approved fasteners in a minimum of four locations, spaced near corners of luminaire.
3. Use approved devices and support components to connect luminaire to ceiling grid and building structure in a minimum of four locations, spaced near corners of luminaire.

J. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for wiring connections.

3.4 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
2. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery power and retransfer to normal.

- B. Luminaire will be considered defective if it does not pass operation tests and inspections.
- C. Prepare test and inspection reports.

3.6 STARTUP SERVICE

- A. Comply with requirements for startup specified in Section 260943.16 "Addressable-Fixture Lighting Controls."
- B. Comply with requirements for startup specified in Section 260943.23 "Relay-Based Lighting Controls."

3.7 ADJUSTING

- A. Occupancy Adjustments: Before Substantial Completion, provide on-site assistance in adjusting the direction of aim of luminaires to suit occupied conditions.
 - 1. During adjustment visits, inspect all luminaires. Replace lamps or luminaires that are defective.
 - 2. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
 - 3. Adjust the aim of luminaires.

END OF SECTION 265119